TUBERCULOSIS (TB), ACTIVE DISEASE

Clinical Features: The most common site of disease is the lungs (pulmonary TB), but other organs (extrapulmonary TB) may be involved (e.g., brain, lymph nodes, kidneys, bones, joints, larynx, intestines, eyes). Systemic symptoms include low-grade fever, night sweats, fatigue, and weight loss. In pulmonary or laryngeal TB, there may also be hemoptysis (bloody sputum), a persistent and productive cough, chest pain, and shortness of breath.

Causative Agent: Mycobacterium tuberculosis complex. This complex includes *M. tuberculosis* and *M. africanum* (primarily from humans), and *M. bovis* (primarily from cattle).

Mode of Transmission: Exposure to tubercle bacilli through inhalation of airborne droplet nuclei from a person with active pulmonary/laryngeal TB. Prolonged close contact with an infectious case may lead to infection.

Incubation Period: approximately 2–12 weeks from infection to demonstrable primary lesion or significant tuberculin reaction. A latent, dormant TB infection can become active years after the initial infection; the incubation period can last for years.

Period of Communicability: Varies from case to case and is dependent upon the location of disease, the symptoms of disease, and smear status. Pulmonary and laryngeal clients pose the greatest risk for spreading tuberculosis. A client with a productive cough is considered a greater risk to transmit the disease than an individual without a cough. All smear positive pulmonary clients are considered contagious. Individuals that are smear negative upon diagnosis are generally not considered contagious unless they have symptoms of TB (i.e. a productive cough). An individual is presumed to be contagious until he/she has met three criteria: treated with appropriate tuberculosis medications for at least 2 weeks, improvement in symptoms, and three negative sputum smears.

Public Health Significance: Epidemics of tuberculosis have occurred among individuals in enclosed places, such as nursing homes, jails, hospitals, schools, office buildings, and factories. Tuberculosis is treatable with the use of medications; isoniazid, rifampin, pyrazinamide, and ethambutol. There are multi-drug resistant (i.e., resistant to both isoniazid and rifampin) forms of *M. tuberculosis*; fortunately, these strains have been reported only rarely in Kansas.

Reportable Disease in Kansas Since: 1982

Clinical Criteria

A case that meets all of the following criteria:

- A positive tuberculin skin test result
- Other signs and symptoms compatible with tuberculosis, such as an abnormal, unstable (i.e., worsening or improving) chest radiograph, or clinical evidence of current disease
- Treatment with two or more antituberculosis medications
- A completed diagnostic evaluation

Laboratory Criteria for Surveillance Purposes

- Isolation of *M. tuberculosis* from a clinical specimen, ***OR***
- Demonstration of *M. tuberculosis* from a clinical specimen by nucleic acid amplification test, ***OR***
- Demonstration of acid-fast bacilli in a clinical specimen when a culture has not been or cannot be obtained

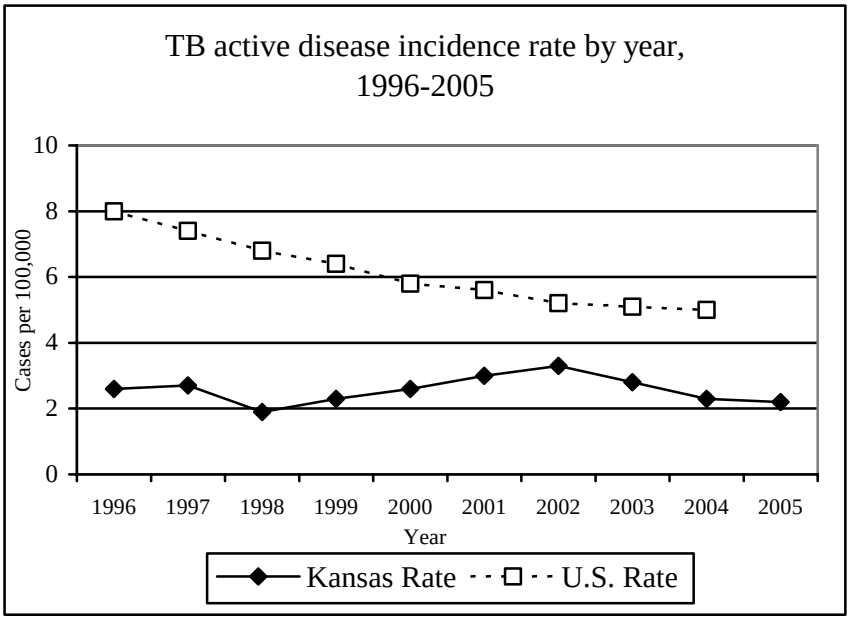
Surveillance Case Definitions

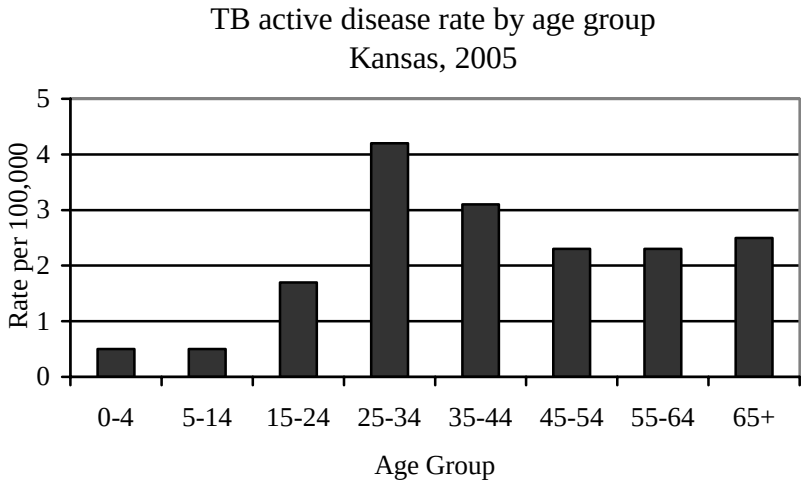
- *Confirmed:* A case that meets the clinical case definition or is laboratory confirmed.

Epidemiology and Trends

2005 Kansas Count: 61

	Rate per 100,000	*95% CI*
Kansas Rate	2.2	(1.7 - 2.8)
U.S. Rate (2004)	5.0	*NA*
Gender		
Male	2.4	(1.6 - 3.3)
Female	2.0	(1.3 - 2.8)
Race		
White	1.2	(0.8 - 1.6)
Black	9.8	(5.1 - 14.5)
Asian/Pacific Islander	16.0	(6.1 - 26.0)
Native American	3.3	(0.0 - 9.6)
Ethnicity		
Hispanic	8.2	(4.4 - 11.9)
Non-Hispanic	1.7	(1.2 - 2.2)
Geographic area		
Urban County	2.9	(2.0 - 3.8)
Non-Urban County	1.6	(0.9 - 2.2)





Kansas reported 61 cases of active tuberculosis disease in 2005, one case fewer than what was reported in 2004. This is the third consecutive year that the case count has declined; it is the lowest case count since 56 cases were recorded in 1998. The three-year median for 2002-2004 was 75 cases.

The majority of cases (n=40, 66%) were reported among residents of urban counties. The combined total for Sedgwick County (n=22) and Johnson County (n=11) accounted for 54% of all reported cases.

The incidence rate was highest among minority populations. Asians and Pacific Islanders had the highest rate of disease (16.0 per 100,000), followed by African-Americans (9.8 per 100,000) and Hispanics (8.2 per 100,000).

Seven cases of HIV/TB co-infection were reported in 2005. This was the highest number of co-infection cases ever recorded in Kansas. Prior to 2005, one to four cases of co-infection were reported annually.